MANUAL

Define RUNNING_DIRS = the directory where you extract "sbpl.tar.gz".
Define LIBRARY_DIRS = RUNNING_DIRS/trunk/sbpl/.

Environment generation

In directory "**RUNNING_DIRS**", run "**roughness.m**" in matlab to generate environment map and roughness map.
PS:
1. The generated "**quad.cfg**" is the 5 state map for direct increment, "**roughness.cfg**" is the roughness map, also for this 5 state direct increment.
2. The generated "**quadmotion.cfg**" is the 3 state map for using motion primitives.

Before doing all the things below, please check that "cmake" and "g++" is installed on your computer.

<Ubuntu>
1. g++ install, running "**sudo apt-get update**" in terminal, then "**sudo apt-get install g++**".
2. cmake install, running "**sudo apt-get install cmake**" in terminal.

Compile of SBPL library

1. Make sure that you install "**g++**" and "**cmake**" in your linux system.
2. In directory "**LIBRARY_DIRS/cmake_build/**", run "**make clean**" and "**find -iname '*cmake*' -not -name CMakeLists.txt -exec rm -rf {} \+**" to clean all source file.
3. In directory "**LIBRARY_DIRS/cmake_build/**", run "**cmake ./.**" to generate makefile script , then "make" to compile the library.

Compile of main loop

<motion primitives>
1. In directory "**RUNNING_DIRS**", "**quad_plan.cpp**" is the main loop of motion primitives case.
2. In directory "**RUNNING_DIRS**", run "**./compileme**" in terminal to compile the main loop for path planning with motion primitives.
3. Run "**./quad_plan quad.mprim quadmotion.cfg goal.txt**" to see how the planner works.
4. Also in directory "**RUNNING_DIRS**", run in matlab "**plot_3Dpath('sol.txt','quadmotion.cfg','goal.txt',0.1)**" to see trajectory of vehicle.

<direct increment>
1. In directory "**RUNNING_DIRS**", "**speed.cpp**" is the main loop of direct increment case.
2. In directory "**RUNNING_DIRS**", run "./**compilespeed**" in terminal to compile the main loop for path planning with direct increment.
3. Run "**./quad_plan quad.cfg, roughness.cfg**" to see how the planner works with a roughness map.
4. Also in directory "**RUNNING_DIRS**", run in matlab "**plot_3Dpath('sol.txt','quad.cfg','goal.txt',0.1)**" to see trajectory of vehicle.